Airborne lead levels were assessed in nine workshops, three each from battery, electronic repair, and welding sources within the Kumasi Metropolis in Ghana. Samples were collected at 0, 2.5, and 5.0 m away from the emission source at the workshops during working hours and another at 5.0 m during break hours. Airborne lead particulates were collected and analyzed using the filter membrane technique and flame atomic absorption spectrophotometry, respectively. There were significant differences ($p \leq 0.05$) among the air lead levels from the workshops. Workshop 3b produced the highest significant values of air lead concentrations of 2,820.31 ± 53.89, 2,406.74 ± 71.87, 754.55 ± 72.52, and 549.01 ± 67.30 μg/m^3 at distances of 0, 2.5, 5.0, and 5.0 m (break-time measurement), respectively, while workshop 1w significantly produced the lowest air lead concentration values of 261.06 ± 21.60, 190.92 ± 36.90, 86.43 ± 16.26, and 61.05 ± 3.88 μg/m^3 at distances of 0, 2.5 5.0, and 5.0 m (break-time measurement), respectively. The air lead levels reduced with distance from emission source at the workshops. At all the distances of measurement at working hours, the airborne lead levels were higher than the World Health Organization standard of 50 μg/m^3 and exceeded the threshold limit values of 100 to 150 μg/m^3 recommended in most jurisdictions. Workers and people in the immediate environs were exposed to air lead levels that were too high by most international standards, thus posing a serious threat to their health.

Keywords Airborne lead · Flame atomic absorption spectrophotometry · Filter membrane technique · Jurisdictions · Threshold limit values